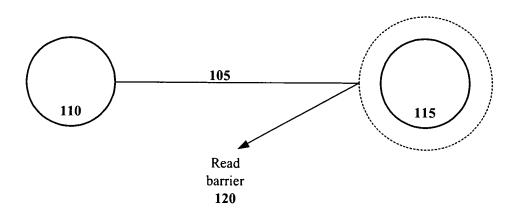
(303) 740-1980

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP Title: Program Object Read Barrier Inventors: Adl-Tabatabai, et al. Filing Date: Concurrently Herewith Express Label No.: EL 981993198 US

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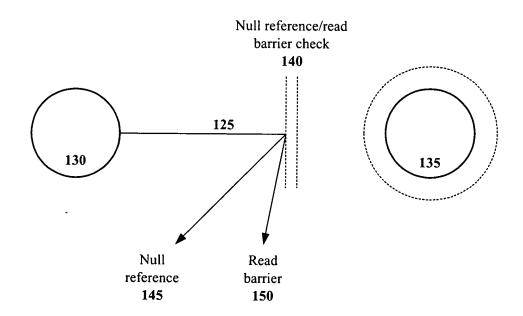


Figure 1

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Inventors: Adl-Tabatabai, et al.
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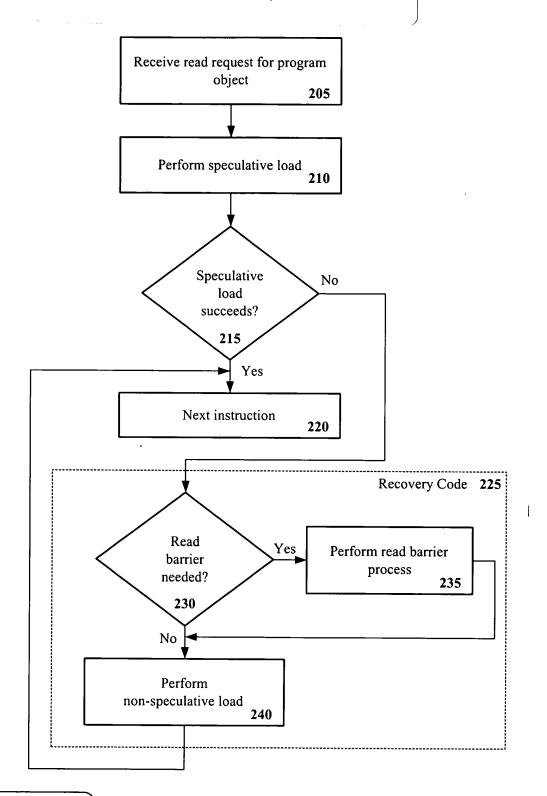


Figure 2

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305 // load p.x

310 II: t = add p, offset(x)

315 I2: v = ld.s[t]

...

320 I3: chk.s v, RecoveryCode

325 NextInst:

. . .

330 RecoveryCode:

335 I4: (p1, p2) = tbit.nz t, 0

340 I5: (pl) t = sub t, 1

**345** I6: (p1) read-barrier(t)

350 I7: v = ld[t]

355 I8: br NextInst

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```
405
       // load p.x
               t = add p, offset(x)
410
       Il:
415
       12:
               v = ld.s[t]
420
       13: chk.s v, RecoveryCode
425
       NextInst:
       . . .
430
       RecoveryCode:
435
       I4:
               (p1, p2) = cmp.eq t, offset(x)
440
       I5:
               (pl) br RaiseNullPointerException
445
       I6:
               (p3, p4) = tbit.nz t, 0
450
       I7:
               (p3) t = sub t, 1
455
       I8:
               (p3) read-barrier(t)
460
       19:
               v = ld[t]
465
       I10:
               br NextInst
```

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505 // load p.x, offset(x) is odd

510 II: t = add p, offset(x) - 1

515 I2: v' = ld2.s[t]

520 13: v = shr v', 8

525 14: chk.s v, RecoveryCode

530 NextInst:

535 RecoveryCode:

540 I5: (p3, p4) = tbit.nz t, 0

**545** 16: (p3) read-barrier(t)

550 17: v = Idl[t]

555 I8: br NextInst

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Title: Program Object Read Barrier
Inventors: Adl-Tabatabai, et al.
Filing Date: Concurrently Herewith
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Attorney Do

Attorney Docket No: 42P18152



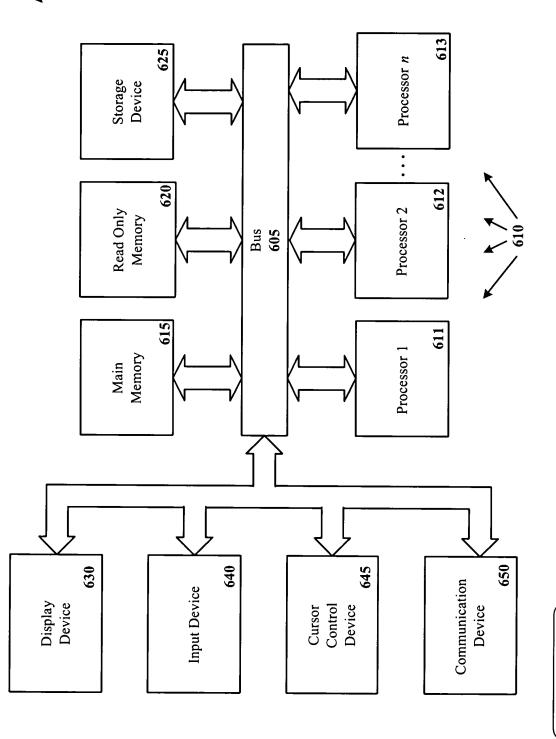


Figure (